# A2058
# RAM EXPANSION
# TECH DATA

OCTOBER, 1988 PN-314881-01

commodore
COMPUTERS

E22/3-5.2

# A2058
# RAM EXPANSION
# TECH DATA

**OCTOBER, 1988** **PN-314881-01**

**Commodore Business Machines, Inc.**
1200 Wilson Drive, West Chester, Pennsylvania 19380 U.S.A.

Commodore makes no expressed or implied warranties with regard to the information contained herein. The information is made available solely on an as is basis, and the entire risk as to quality and accuracy is with the user. Commodore shall not be liable for any consequential or incidental damages in connection with the use of the information contained herein. The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty as to quality or suitability of such replacement part. Reproduction or use without expressed permission, of editorial or pictorial content, in any matter is prohibited.

This manual contains copyrighted and proprietary information. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of Commodore Electronics Limited.

Copyright © 1988 by Commodore Electronics Limited.
All rights reserved.

# TABLE OF CONTENTS


| TITLE | PAGE |
|---|---|
| A2058 SPECIFICATIONS | 1 |
| COMPONENT PARTS LIST | 2 |
| PCB LAYOUT | 3 |
| SCHEMATICS #312371 REV. B | 4 |

# 2058 8MB RAM EXPANSION BOARD SPECIFICATIONS

The 2058 Expansion RAM Board is a memory expansion board which plugs into the A2000 expansion slots. This board is auto-config compatible and can be configured as 8MB, 4MB or 2MB of fast memory. Upon initialization of the A2000 the expansion RAM board is interrogated to determine its memory size. J1 and J2 along with the auto-config hardware determines the memory size of the board and pass this information to the Amiga OS. Memory configuration is determined as follows:

| J1 | J2 | Memory Size | RAM Ref. # |
|---|---|---|---|
| OPEN | OPEN | 8 MBYTES | INSTALL ALL 64 RAMS U15-U78 |
| OPEN | SHORT | * — NO AUTO-CONFIG. — * | |
| SHORT | OPEN | *4 MBYTES | INSTALL — U15-U30, U47-U62 |
| SHORT | SHORT | 2 MYBTES | INSTALL — U15, U17, U19, U21, U23, U25, U27, U29, U47-U54 |

**NO AUTO-CONFIG: When J1 is open and J2 is shorted the boards auto-config hardware is disabled. This is a board diagnostic mode only and allows the board to be auto-configed independently of the Amiga OS. Once the board and machine have been powered up and software loaded, the RAM board can be auto-configed by removing J2 and loading the base address register with the desired memory location.

**I/O Definitions**

The following I/O addresses refer only to the offset locations since the Actual board location in physical memory is configurable as described in the Amiga Expansion architecture manual. Refer to this manual for details on the auto-config I/O descriptions. I/O locations 0 hex through 16 hex are written out as nybbles or 4 data bits (AD12-AD15). I/O locations 48 hex is written out as a byte (AD8-AD15).

| Hex Location | Definition |
|---|---|
| 00/02 | Boardtype and Size |
| 04/06 | Product Number |
| 08/0A | Parameters |
| 10/12 | Mfg # high |
| 14/16 | Mfg # low |
| 48/4A | Base Address Register |
| 4C/4E | RAM Board Disable |

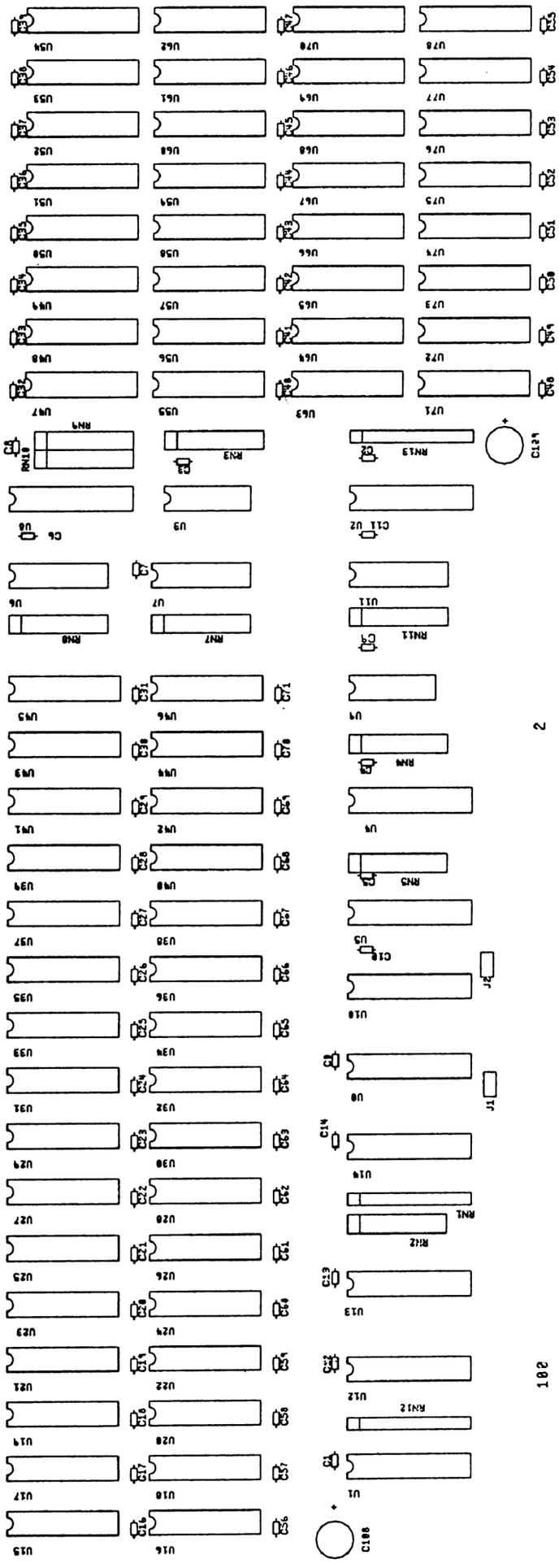
***NOTE:** Only 4 MEG available to 2058, if A2088 installed.

# A2058 COMPONENT PARTS LIST

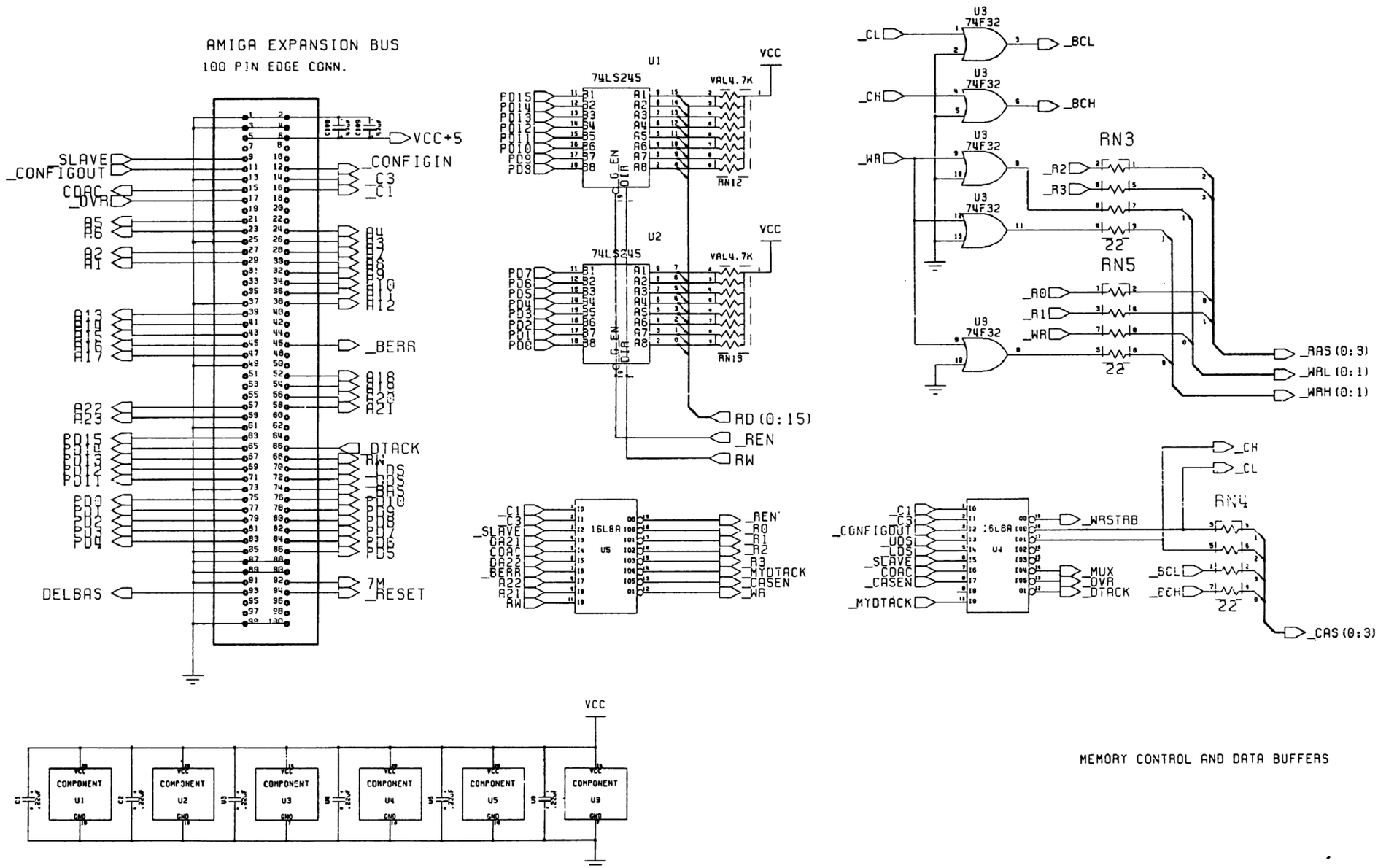
## *PCB ASSY# 312370*

**(-01 8MB, -02 4MB, -03 2MB)**

| | | |
|---|---|---|
| **IC COMPONENTS** | | |
| 390089-01 | IC, 74F245 | U1, U2 |
| 390077-01 | IC, 74F32 | U3, U9 |
| 312364-02 | IC, PAL 16L8A ADDR SIZE CNTRL | U0 |
| 318068-01 | IC, PAL 16L8A CNTRL PAS/CAS W/OVR | U4 |
| 318067-01 | IC, PAL 16L8A CNTRL RAS/CAS | U5 |
| 312363-02 | IC, PAL 16L8A AUTO CONFIG CNTRL | U10 |
| 318052-01 | IC, 74F258 | U6, U7, U11 |
| 901521-43 | IC, 74LS374 | U12 |
| 318041-01 | IC, 74F521 | U14 |
| 318050-01 | IC, 74F244 | U8, U13 |
| 318076-01 | IC, DRAM 1MB X 1 | U15-U78 (-01 LOC)<br>U15- U30, U47-U62 (-02 LOC)<br>U15, U17, U21, U23, U25, U27, U29, U47-54 (-03 LOC) |
| | **VENDOR OEM NUMBERS** | |
| | **NEC UPD 421000C-10**<br>**OKI M5M511000-10RS** | |
| **RESISTORS** | | |
| 902442-22 | RES NTWK., 1K OHM X 7 SIP, 8 PIN | RN2 |
| 902410-10 | RES NTWK., 1K OHM X 9 SIP, 10 PIN | RN1 |
| 902422-04 | RES NTWK., 22 OHM X 4 SIP, 8 PIN | RN3-7, RN9-11 |
| 902410-08 | RES NTWK., 4.7K OHM X 9 SIP, 10 PIN | RN12, RN13 |
| **CAPACITORS** | | |
| 315034-01 | CAP, CERM, MONO, RAD, .22UF, 100V | C0-C14 |
| 315034-02 | CAP, CERM, MONO, RAD, .33UF, 100V | C16-C71 |
| 390101-01 | CAP, ELEC, RAD, 47UF, 16V | C108, C109 |
| **MISC. COMPONENTS** | | |
| 904150-07 | IC, SOCKET, 18 PIN | U31-46, U62-78 (-02 LOC)<br>U16, U18, U20, U22, U24, U26, U28, U30-46, U55-78 (-03 LOC) |
| 903345-01 | CONN, DUAL ROW, .100 IN. CENTER | J1, J2 |
| 903326-02 | CONN, SINGLE ROW, .100 IN. CENTER | SUB: J1, J2 |
| 390043-01 | SHUNT, FEMALE, 2-POS, .100 IN. CENTER | -02 INSTALL AT J1,<br>-03 INSTALL AT J1, J2 |
| 380120-08 | EXTENSION CARD PANEL | |
| 906800-01 | SCREW, 3M X 4.0 LG. | |

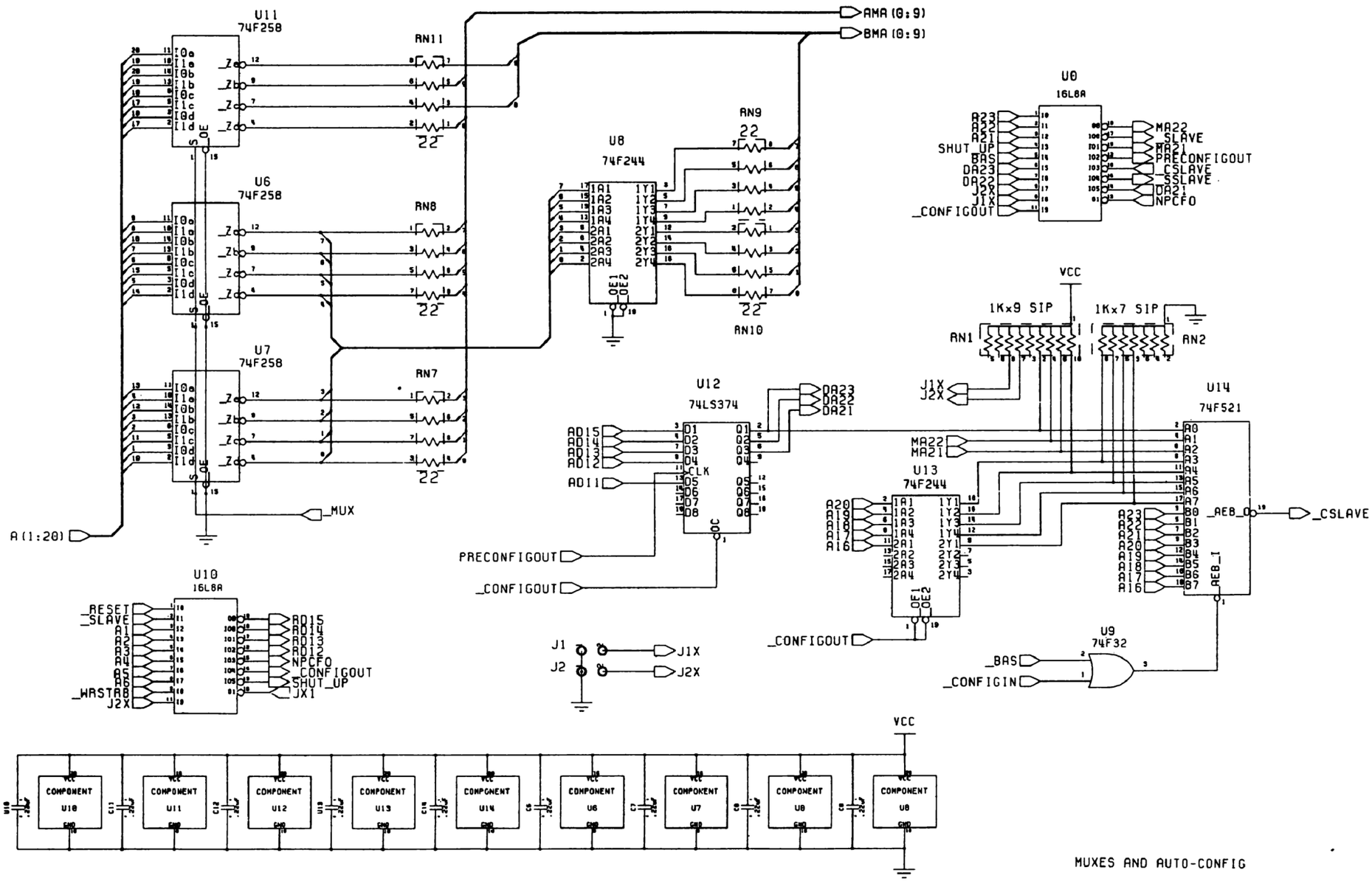


## PCB BOARD LAYOUT

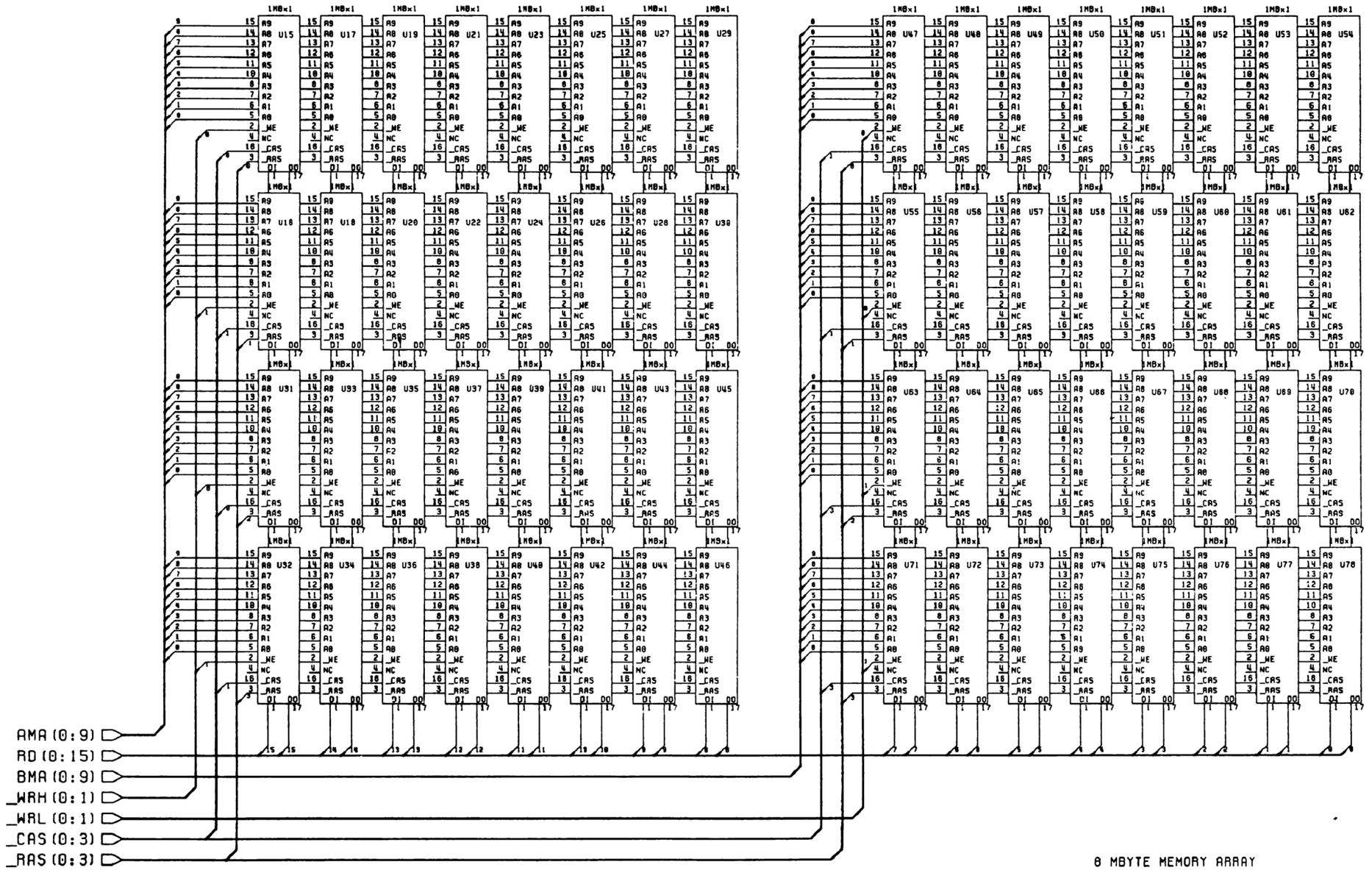



MEMORY CONTROL AND DATA BUFFERS

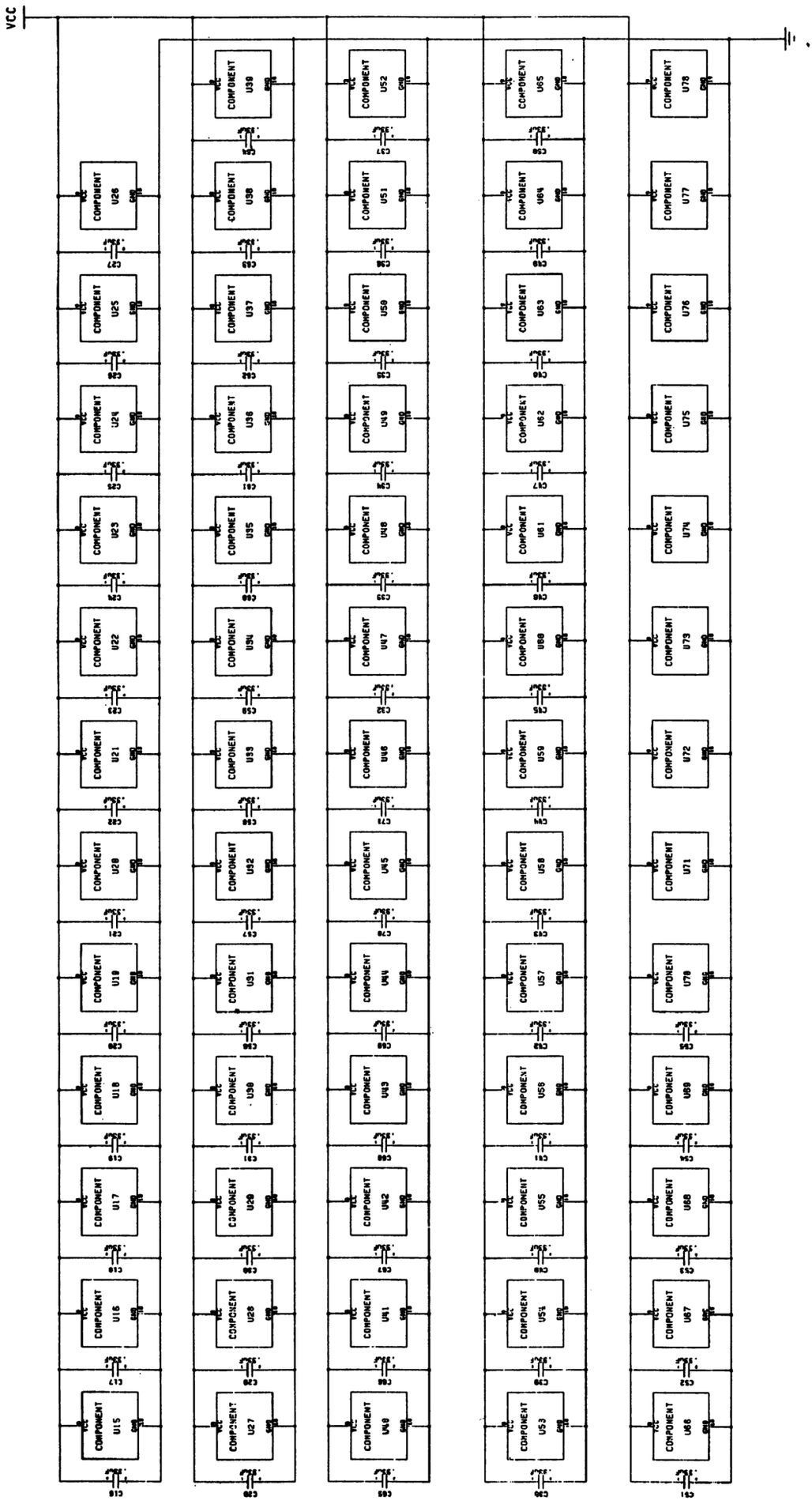
# SCHEMATIC #312371, REV. B




**SCHEMATIC #312371, REV. B**




## SCHEMATIC #312371, REV. B




**SCHEMATIC #312371, REV. B**